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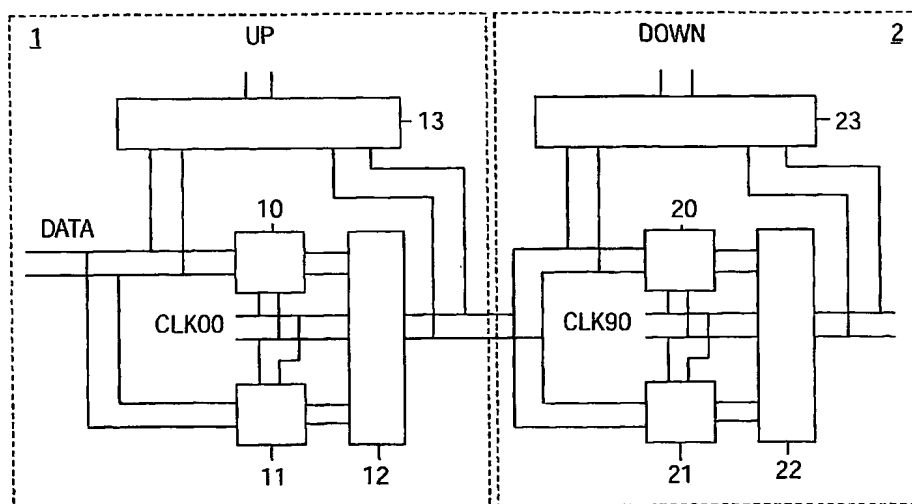
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(54) Title: **LINEAR PHASE DETECTOR WITH MULTIPLEXED LATCHES**



(57) Abstract: Linear phase detectors comprising circuits (1,2) receiving first and second clock signals (CLK00, CLK90) for generating first and second control signals (UP,DOWN) for use in clock extractors and data regenerators have large delays due to long path lengths and many operations between input and output (insight). They can be made faster by providing each circuit (1,2) with two parallel latches (10,11,20,21) and a multiplexer (12,22) for multiplexing latch output signals (basic idea). A data signal is supplied to the first circuit (1), and a first circuit output signal is supplied to the second circuit (2). By introducing a third and a fourth circuit (3,4) each also comprising two latches and a multiplexer, a fast linear phase detector has been constructed having a gain which is independent from the number of transitions in the data signal, which is advantageous. Logical circuitry (13,23) of each circuit (1,2,3,4) is coupled to an adder/subtractor (5).



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